

THE STUDY OF GEOGRAPHY



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THE STUDY OF GEOGRAPHY

A TEACHER'S MANUAL

TO ACCOMPANY

MORANG'S MODERN GEOGRAPHIES

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PREFATORY NOTE

As "Morang's Modern Geographies" are a somewhat marked innovation, both in subject matter and in form, a word of explanation may perhaps be in place. The principles upon which these Geographies have been prepared are fully explained in the following pages; indeed this is the purpose of the issue of this little book. The form adopted is that of the latest geographical text-books in Great Britain and in the United States. After carefully considering the question, the Publishers came to the conclusion that the old form is both unnecessary and unwieldy. The main excuse for the size of the common geography is the supposed need of large maps, a need which should be supplied by atlas and wall maps. This supposed requirement has led to the introduction of so many names, entirely unnecessary to pupils, that the purpose of a school-book has generally been sacrificed to that of a cheap atlas. The most pertinent inquiry in regard to the maps of a text-book in geography should refer not to their size, but to their quality; and in respect of excellence it is confidently stated that the maps of "Morang's Modern Geographies" are the best thus far printed in any text-book on the subject. Aside from this, the old form of geography is distinctly objectionable because of its size, which makes it difficult to handle and to carry. When open it occupies nearly the entire surface of the desk; and being so unwieldy, it is the most easily damaged of all the school books in use.

A word should be said in regard to the illustrations in the Geographies. These have been selected with great care to illustrate specific points; and for the sake of accuracy, photographs have in most cases been employed. They are not inserted merely for the purpose of entertainment, but in every case bear a distinct relation to the text. They are not intended as mere *pictures*, but as *illustrations*; and being numbered and referred to frequently, they pay for their space by contributing materially to the value of the books.

It should be noted also that figures and statistics have rarely been mentioned throughout the Geographies, as it has not been considered advisable to burden the young memory with such details. In the appendixes, however, will be found much valuable information, which may be made available for supplementary lessons. Further the statistical information is the latest obtainable, and may be implicitly relied upon. It is the intention to correct and to bring this material up to date as each succeeding edition is issued from the press.

Attention should also be called to the carefully prepared series of map questions at the beginning of each chapter, to the review questions in the appendixes, and to the pronouncing index of proper names at the end of each volume. To sum up, "Morang's Modern Geographies" are well printed and well bound; they are of convenient size and shape; the illustrations are beautifully finished and appropriate to the text; the maps are clean and well colored, not crowded with details, and of suitable size; the reading matter is interesting and instructive; they are constructed on sound pedagogical principles, and are on a line with the best modern text-books published. Keeping these facts in mind

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the Publishers very cordially recommend "Morang's Modern Geographies" to the consideration of the teachers in the Public Schools of Canada.

In conclusion the Publishers beg to acknowledge the great assistance they have received in the preparation of this book from "A Teacher's Manual of Geography," by Charles McMurry, Ph.D., associate editor of Tarr and McMurry's Series of Geographies.

OUR HOME AND ITS SURROUNDINGS

AND

OUR EARTH AS A WHOLE

OUR HOME AND ITS SURROUNDINGS

FOR beginners, home geography stands in sharp contrast to the geography of the world as a whole and to that of foreign countries. It is relatively so small. But a knowledge of local geography and industries furnishes a good starting-point in geographical study. It is difficult for adults to understand how much children are dependent upon things which they have seen, in order to explain things which they cannot see. The observation of facts in the neighborhood must precede the study of things at a distance. A definite knowledge of the home surroundings, of its hills, streams, landscapes, agriculture, manufacturing, commerce, changing seasons, storms, floods, etc., is necessary as an introduction to similar topics in the world abroad.

When we come to study the climate, surface, industries, products, and commerce of distant provinces and of foreign countries, our ability to construct correct pictures is based upon the varied ideas of similar kind that we have gathered in vivid and real form from our own home neighborhood. The imagination must be our chief helper in constructing geographical pictures of things at a distance from home ;

but the imagination cannot construct pictures out of nothing, any more than a builder can construct a house without materials. The imagination works and builds with the materials which experience has already gathered. It is not expected that we shall gather all the experimental facts at once, but we may encourage the children to keep their eyes open and their mind alert for this kind of knowledge. We may at least open the door to these varied and interesting forms of activity.

Children are already familiar with these home things in a vague, loose way, but we are inclined to overestimate the extent and accuracy of their knowledge. In some special cases they know enough about certain local topics without help from the school; but, generally speaking, children have little accurate knowledge of local industries and phenomena. Even the teachers are found in many cases to be extremely deficient in definite knowledge about such common topics as local directions and topography; weather changes; the dairy, the cultivation of garden vegetables and fruits; the work of the farm in caring for crops and farm animals; the tools, machines and processes of the blacksmith, the tinner, the carpenter, and others; the work done in planing-mills, waggon factories, grain elevators, mills, etc.; the shipment of fruits, meats, glassware and iron products by rail and by water, etc.

Many of these things which we assume that teachers and children know by their own daily observation are either not known at all, or are not well understood. If they are to be clearly grasped and made the basis of a real understanding of similar topics on a larger scale, it can be done only by turning the children's thoughts definitely upon these supposedly familiar topics. They may be

handled in such a way as to furnish interesting instruction and to require genuine effort on the pupil's part, both to get clear notions and to express them in language and by drawing. There is much variety of surprising knowledge to be gained by stepping from the schoolroom into the real world, in order to see the different kinds of workmen in their employments, and to get a view of the country from the hilltops. This is especially fitting for children, because of their delight in these concrete realities. The ignorance among so-called intelligent people of many important things about home is matter for surprise. It is to a large extent the cause of that lack of sympathy and appreciation among the well-to-do classes for many other people who are close about them. It is an extremely faulty training that allows us to pass by many of these matters of human interest without desire or effort to understand them.

It is a marked and justifiable tendency of our modern education to incorporate into the course of study a knowledge of the simple universal trades and occupations upon which our whole state of culture rests. It is an extremely practical and fundamental demand that children should be made acquainted with these local affairs. They will everywhere need them as a means of interpreting social and physical environment in all their studies and throughout life.

Of course it must be taken for granted that a large part of this knowledge is picked up by a child incidentally in his daily experiences. But to carry out this purpose more fully with classes beginning the study of geography, it will be necessary to conduct a few excursions to a number of places of special interest, in particular to those which are near and convenient to the schoolhouse. In some cases an excursion is made in preparation for one of the topics dis-

cussed in "Our Home and Its Surroundings," such as that on soil or hills. Localities differ greatly in respect to the possible excursions which they furnish, but almost any place will afford more opportunities for instructive excursions than the school will be able to use. In the springtime an hour's visit to a neighboring garden in which the seeds of spring vegetables are being planted in the fresh-turned earth, will be instructive. Observe the manner in which the soil is prepared for planting, how hotbeds are arranged for cabbage or tomato plants, and later, how the young plants are transferred to the garden. Notice the ploughing, the various kinds of vegetables planted, and the different kinds of seeds and ways of planting them. It is well to trace the growth and cultivation of one or more of the common vegetables through the season, as cabbages, potatoes, and among small fruits, blackberries and strawberries. The interest thus awakened in the children will cause them to watch their own gardens more closely, and perhaps the neighboring gardens, and report in class the facts observed. Where the school grounds are large enough, a small space is sometimes spaded up and used as a school garden. A single excursion to a garden for three-quarters of an hour will furnish valuable material for discussion in one or more lessons. The next lesson in geography should require a full statement of the things observed on the excursion of the previous day. Sometimes drawings of the vegetables or plants furnish good exercises. It is a matter of interest for the children to make a list of all the garden vegetables raised in the neighborhood, such as cabbages, onions, beets, cauliflower, turnips, carrots, etc. The small fruits may be studied and listed in the same way.

At another time an excursion may be made to some frame house in process of construction; the various materials, as brick, stone, sand, lime, and lumber are noticed, and also the work and tools of the workmen. Where do the builders get these materials (lumber-yard, planing-mill, sand-pit, brick-yard, quarry, hardware store, etc.)? As the frame goes up, notice the joists and studing, the sheeting and siding, the rafters and shingles, the matched flooring, the windows and the door-frames, and other distinctive parts of the construction. Drawing lessons on the plan of the foundation, framework, and elevations may be assigned. The thoughtful working over of this excursion in the class will clear up the ideas of the children, and will give them a mastery of the simpler forms of construction. A second excursion, when the building is under roof and the interior finish is being placed, will show the different kinds of mill-work and finishing lumber used (hardwood floors, casings, mantels, cupboards, gas fixtures, ornamental carving, or frescoes).

In a lesson like this, children may see how different classes of workmen assist each other and depend upon one another,—as carpenters, masons, plasterers, plumbers, painters, tinnerns, etc. Indeed, it is well to make a list of all the different kinds of men and labor necessary to the building of a common house. When we add to this the stores and shops and lumber-yards which furnish the material, we see how many people are engaged directly or indirectly in house-building.

It seems advisable also, in some cases, to reach out beyond the home neighborhood and to explain where the pine lumber comes from, where the brick is made, or where the stone is quarried. In this connection it is necessary to

establish the cardinal points of the compass, and to have some kind of a map to show the location of the surrounding districts or counties. It will be better for the teacher in such a case, to sketch the map upon the board, as children have but little power at first to explain maps.

Upon an excursion of this kind, the teacher should exercise careful control over the children, and should direct their attention to the chief points to be observed. Children will be found to be very careless and inaccurate in their observations and descriptions. Even with the most objective material before them they need to be taught how to observe accurately and how to describe correctly. An excursion should be as well planned as an ordinary class lesson. The teacher should have visited the place beforehand, and should have laid out the scheme of observation. Many teachers find such excursions trying upon the nerves on account of the playful dispositions of the children and their tendency to scatter and to roam. It is necessary, therefore, for the teacher to form a careful plan and to act with prompt decision in cases of disorder. To compensate for this greater freedom in the open air the teacher will be brought into closer sympathy with the children, and will obtain a better insight into their individualities.

The broadening of the teacher's knowledge of practical affairs is worth mentioning. Such excursions to the woods, streams, hilltops, gardens, quarries, parks, stores, factories, public buildings, wharves, shops, freight sheds, and mills will bring him, in a most interesting and instructive manner, into contact with the great world of realities outside of schools and books. It will qualify him in many practical ways to be a real instructor. In most cases he will

find that he will be treated with kindness and full consideration by those who have charge of the places visited.

Even if only a few such excursions can be made in a year, they are valuable in suggesting to the children the advantages of such observations. Moreover, the experience of children at other times may be drawn on to enrich home geography even when no excursions are made. In fact, one of the best results of the study of home geography is a readiness on the part of the children to observe and to report things seen in the surrounding country. What the children have picked up in their various home and neighborhood experience, if properly used, will greatly aid the work of recitations.

In discussing an excursion after returning to the school, the teacher may do a great deal to make definite the ideas gained by observation. At this point all the resources of the teacher are called into play. Children upon an excursion see things in a fragmentary and unconnected way, and their real insight into the meaning of things seen rests upon the teacher's skill in showing the connection of the parts. In a factory or planing-mill, for example, the power that drives the machines is not observed by the children, and they do not understand how a steam-engine in a separate room can drive machines at a distance. For the sake of safety and for other reasons parts of the machinery are concealed, so that a crude drawing may be necessary to show in brief how the whole machine operates, as in case of the band saw, or the lifting of grain in a grain elevator, or the work of a turbine wheel in a mill. If the teacher draws the objects, machines, and processes in connection with these observations, he has an excellent means of giving vividness to the children's observations. The children

also should be encouraged in this graphic expression of their thought. In visiting fields, forests, shops, and factories many objects will be more clearly defined in the mind, if this practice of sketching and blackboard explanation is frequently resorted to,—not æsthetic drawing, but mere sketching, diagramming, and picturing of objects in a crude way. The regular drawing lessons of the school can do nothing better, at this stage, than to prepare children for greater skill in this kind of drawing. It may be well also in the drawing lessons to take some of these objects for more accurate reproduction.

It is evident that the teacher should acquire ease and facility in making sketches, diagrams, and pictures. Next to direct observation itself this is the most concrete mode of teaching. It will also find quick and natural imitation among the children, as it is a method of expression to which they have been accustomed almost from infancy. The time spent upon such drawings need not be great, but it puts the children to severe tests in fixing the form of objects, and in expressing clearly their ideas. Oftentimes this is a far quicker mode of explaining objects and processes than by verbal statements. A free use of the blackboard by teacher and pupils is invaluable.

In what order these excursions should take place is not a matter of great importance. This will depend upon the season and upon the local surroundings, and upon the series of topics worked out in the text-book. May and June, September and October, are good months for visiting gardens and farms, and for outdoor excursions to observe the creeks, slopes, hills and valleys, soils, and other physical features. Excursions to shops and factories may be made at almost any time of the year when the weather is

good. Oftentimes an excursion may be made from the school to some store or shop only a few blocks away, and the children brought back to the school at the end of thirty or forty minutes. Sometimes it is better to take the last hour of the day for the excursion, and to send the children home at its close.

It should always be kept in mind that there are dangers connected with visiting factories and workshops. Great precaution is necessary. A single accident would outbalance a great amount of good. The teacher should be very watchful and decisive in preventing such accidents. In mills and shops, where machinery is used, it is better not to take more than twelve or fifteen children, and to look out closely for their safety. It is better to warn the children beforehand, and to be very watchful while with them. Even in excursions, where no danger is present, the teacher should be very careful not to overexcite or overstrain the children. In climbing stairs to get to a high point, in visiting strange places, especially where there is the noise and rattle of machinery, some children become timid and nervous, and should be treated with the kindest consideration.

When the parents are interested and visit the school, it might be well to invite one or more of them to go with the teachers and children upon one of these excursions. It is very desirable that parents should learn to do this, both for their own benefit and for the sake of their children. Parents may be of much aid to the teacher upon excursions, in explaining difficulties, in caring for the children, and in getting them safely home again. It will awaken the interest of parents to see what use is made of these excursions in the later instruction.

By inviting parents to take part in these expeditions, may be possible to awaken a greater appreciation for this kind of school work and thus bring it more easily into general use.

Parents generally do not see the value of excursions. They are disposed to think that children are better employed at their books. They do not understand that the real insight of children depends upon the number of things in the world about them which they have seen and understood. A meeting of parents to discuss the value of excursions would be helpful. The principal reasons for such trips might be presented, and illustrations given showing their educational significance.

The problem of interpreting maps and of map-making is one of the chief difficulties in the first year of geographical study. The excursions with children to high points of observation, either hilltops or high buildings, furnish the indispensable material for a map of the neighborhood. The previous experiences of the children in walks about the home are equally valuable as preparation. In some cases the school playground or some hill near the schoolhouse gives the best starting point for schoolwork in map making. While upon the excursion the children point out and locate objects according to north, south, east, and west. Upon returning to the schoolroom the teacher, after collecting the children about him and laying a large piece of paper upon the floor, may reproduce in a map, of which the school playground forms the centre, the relative position of the different objects in the neighborhood. The four directions correspond exactly to those given in the excursion. In the first drawing it is not necessary to make the map upon a definite scale. If the teacher hangs this map

upon the wall, he may easily show the children how to interpret the directions correctly, no matter on which side of the room it is hung. Some practice in repetition, however, may be necessary to overcome this difficulty. Such a map is usually made upon a flat surface, and does not help children to image irregularities, such as hills and valleys. To bring out this idea of relief it is well to make a sand map of the playground, or of some limited district which may be overlooked by the children. After making an excursion along the creek and slopes, or to a hilltop with special reference to differences in elevation, valley slopes, and drainage, the sand map may be made. These variations may be better seen in walking about the country than from some high point of view. It is well, however, to trace the course of a river valley in both directions, with its smaller tributary creeks and their smaller valleys, thus getting the general slope of the country with its local variations. Of course such ideas will not come to full clearness from a single map, nor from two or three lessons. In connection with the various excursions, these ideas of distance and elevation will be repeated and cleared up. It is generally possible to survey a district of country eight or ten miles in diameter from some high point of view. On the basis of such observations it is well to make a map upon a scale of perhaps an inch to a mile. It may include the railways, three or four principal waggon-roads, and perhaps two or three neighboring villages, and the more extended course of a creek or river. Such maps should be made carefully by each child. In connection with this, may be shown a map of the township and of the county or municipality with which the children are more or less familiar.

Attention should be particularly called to the fact that, although for convenience the map is hung upon the wall, it better represents the district or country when laid flat upon the floor.

The greatest difficulty is found in introducing children to definite ideas of distance and topography for whole provinces and larger areas. In discussing products, such as lumber, groceries, fruits, coal, brick, building stone, etc., and in pointing out the sources from which they are brought to us, it is advantageous to use a larger map of the province and of neighboring provinces, to locate definitely these regions. In order to give as much clearness and definiteness as possible to the ideas of distance, area, etc., it is necessary to fall back upon the previous experiences and travels of the children. They are familiar with railway travel for short distances. The time required to travel over these distances, by waggon, in buggies, or upon the cars, may help the children to form more definite ideas. The time required by them to go to the neighboring villages and towns should be used frequently as a basis of comparisons. Also the journeys by rail to larger cities, at a greater distance. The time taken formerly by stage-coaches and by the earlier settlers in travelling, and the difficulty and hardships of such journeys, will also help the children to form clearer notions. It is not likely that any teacher will overdo this effort to make concrete these geographical notions of distance and space.

It must not be expected that children in school will be able to get as clear and accurate notions of surface, distance, and the various forms of land and water as the adult who has travelled much, and has seen many varieties

of country. All of these geographical concepts grow gradually with experience.

In dealing with larger areas of country, maps which give a bird's-eye view of extensive regions, such as some of the railway maps and guides, are quite helpful. They form a good transition from the flat map to the relief map. They should be studied and discussed in the class, as should all maps, so as to correct false notions and give greater clearness. The relief maps found in the geographies and large wall relief maps are helpful in giving general, approximately correct notions, but in order to avoid serious error, they should be discussed and explained. Good pictures of broad valleys and mountain landscapes greatly assist the children in forming definite ideas. The pictures of maps given in Fig. 132 in "Our Home and its Surroundings" illustrate the connection between pictures and maps. Many of the pictures through "Our Home" may be used to great advantage when it is necessary, in different topics, to illustrate the varieties of surface. The constant appeal by the teacher to familiar standards of measurement, as the foot, yard, and mile, or the block, section, and township, and to heights as measured upon steeples, buildings, chimneys, watch-towers, and hills, will enable the teacher to correct many false notions, and at the same time give a degree of concreteness and reality to the instruction.

The home geography, as indicated above, should often reach out into the neighboring parts of our own province, and into other provinces, and also into the United States, showing from what sources fruits, coal, lumber, iron, sugar, salt, and many other products come. This is a natural and excellent means of gradually extending geo-

graphical experience beyond home. The grocery or fruit store, the hardware and tin shop, the lumber-yard, the shoe or waggon factory, point to other parts of the country from which their material is derived. The map of Canada, of the United States, of Great Britain, and even of the whole world, will be needed, at various times, in tracing out the sources of common necessities and staple products used in our own neighborhood. As pointed out before, in all these efforts to interpret maps, sufficient time must be taken to get at the primary conceptions of map-making. We must use the crudest and most rapid forms of illustration, such as the making of maps on the floor, quick blackboard sketches, etc., so that the objects and relations are made very clear to the children. Such time is well spent in forming a sure basis for all future globe and map studies.

The observation of seasonal changes, the varying length of day and night, of the position and apparent movement of the sun, moon, and stars, may be carried on in any locality, and is a good preparation for later topics in physical and mathematical geography. The climatic changes connected with the successive seasons, the winds and storms, frost and ice, and their effect upon vegetation and animal life, are of great value in studying climatic conditions and their effects in other parts of the world. We sometimes forget that these grand object lessons, some of them the most beautiful and imposing, belong directly to the child's home and are part of his own experience. They all involve problems too difficult for a child to understand, but the simpler and more manifest phases of these phenomena should be carefully studied as a key to the larger geographical world which he must learn

grasp and interpret. Even within the first year's study, topics of this nature will demand a brief treatment, and it will be necessary for the teacher to make use of all the child's experience about home to give him even a meagre and approximate view of the world as a whole, of the continents and oceans, etc.

Another topic which involves more or less difficulty throughout the school course, on account of its abstract nature, is government. This is a subject that is capable of concrete illustration in the home neighborhood. The local government of the city, the town council and officials, with their duties and mode of election, the police, the jail and treatment of offenders against law, local taxes and the uses to which they are put for streets, water supply, schools, etc., the popular modes of lawmaking,—all these phases of self-government may be observed and understood by the children in nearly every community. They may know some of the people who serve as local magistrates or justices of the peace and the duties they perform, or by a little discussion in the school they may be made well acquainted with these facts. Even the relations of the central government to the smaller place may be definitely studied in connection with the post-office and postmaster, custom house and revenue officers, and oftentimes in connection with members of Parliament and judges, who are under the Dominion rather than the Provincial authority.

A few lessons upon the mode of assessing and collecting taxes, and on the various uses of the money for paving the streets, building bridges, providing for the fire and police departments, building schoolhouses, etc., are both interesting and instructive to children. One reason for this

is the fact that all these things are familiar to their own eyes, and acquire in this way a fresh and more definite meaning.

When we come to compare later the departments of the Dominion government and of the Provincial government with that which is local in our own neighborhood, we shall find on a larger scale exactly the same things as in local government, the executive, the legislative, and the judicial. It would seem to be possible in this way to remove some of that haziness which marks the ideas of many public school boys and girls on government. In this connection a visit may be made to the court house and to the rooms where cases are tried, or to the registry office where the documents, such as deeds for all the property in the county, are registered and preserved, or to the county or municipal offices. Several lessons in the schoolroom may be devoted to the elaboration of the things observed on such a visit.

The three important topics, included under building materials, clothing, and food products, embrace a large number of lessons upon the various common necessities and occupations of men. They are of special value in the later study of geography, because they deal with those trades and occupations which are common in every civilized and semicivilized country of the world. The carpenter, the mason, the shoemaker, the tailor, the farmer, the miller, the blacksmith, the baker, the shepherd, the grocer, the weaver, are found in every locality, almost in every part of the civilized world. A study of these local trades and occupations in our own community helps to make a child a citizen of the world, and puts him into sympathetic relations with the simple, primitive industries of men everywhere.

We will cite a few examples. In connection with building materials he may study, not only a house in process of building (as shown above), but the lumber-yard, the brick-yard, the stone quarry, the carpenter shop, the sawmill, and the planing-mill, besides other common sources from which the material is drawn. If it is possible for the children to make an excursion to the carpet weaver's, they will see, in its simplest, crudest, and most easily understood form, that process of weaving which is common to all the great textile industries in all lands. Where opportunity offers, it is of great interest to children to visit a pottery and to observe the potter's wheel, and the skill of the potter in shaping vases from the crude clay.

The local geography of a large city requires a different treatment from that of a village or a country place. In Canada we have no large cities like London, Paris, or New York, but even a city like Toronto or Montreal is so complex that it takes much time, study, and discussion to understand even the simpler phases of its life and occupations. On account of the numerous kinds of business, trade, and sight-seeing in a big city, it is necessary to pick out those topics that may be treated from a simple point of view. Bulky products like lumber, grain, iron and fruits may be studied to much better advantages than difficult, refined, and complex processes like the weaving and dyeing of textile fabrics, the manufacture of fine pottery and silverware, watchmaking, and the construction of complex machinery, engines, etc. Children cannot visit great manufacturing establishments to good advantage, especially those which present an intricate series of processes executed by machinery. Children can understand a saw-

mill, a blast furnace, a brick kiln, a foundry where simple castings are made, or even a rolling-mill; but in most cases it is better to visit a small blacksmith shop, a carpenter's shop, a schooner unloading, a carpet weaver's, a park, the seashore, a grocery or fruit store, a small job printing establishment, a baker's, a grain elevator, a market garden, a bridge, a canal boat, an ocean steamer, a fish market, a monument, a freight shed, a shoemaker's, a basket-maker's, a cooper shop, a lumber-yard, a shipping dock, in short, some easily grasped whole. If a map of the city is studied, it should be simple, giving only a few streets and leading sections, and locating a few of the most important points.

Even if we limit ourselves to the simpler, more prominent and important topics, it will require much more time to compass the home geography of a city than that of a country place. The greater part of a year in junior classes may profitably be spent upon the home geography of a large city, especially if we follow up the connections with the adjacent regions. To some extent this should be done, and the sources of large staple products, like lumber, iron, fruits, cotton, dairy products, vegetables, grains, etc., should be traced out on a larger map of Canada and neighboring countries.

Nearly every town or city has some special local industries worthy of study, such as waggon-works, or a cooper shop, or a shoe factory, or glass-works, or a foundry, or a paper factory, which are deserving of careful study. At the present day, when we talk so much of the social function of the school, it is well to note the social value of such studies. In them it is easy for children to see the complete dependence of different occupations and

trades upon one another, and how necessary it is for people to work together in harmony. They will also learn something of the hours of labor and wages of laboring men, and of the value of expert skill in workmen. The significance of machines, of mechanical inventions for accomplishing the greatest amount of work with the least expense, will be noted.

It is difficult to see how children may be trained in a better way than this to spell out later the great problems of social life.

In close relation to these topics stands that of local commerce, roads, and bridges. The chief waggon roads by which the farmers, gardeners, dairymen, quarrymen, wood-cutters, and fruit-growers bring their produce to market will be pointed out, and will also be worked into those local maps which have been described. The farmers and others, with the profits gained by the sale of their products, buy such things as they need in the stores. The idea of the town as a trade centre for receiving raw products from the surrounding country, and, in return, for distributing clothing, groceries, machines, and other things to the farmers, will be understood. The railway lines to the neighboring towns, the freight sheds, the elevators, and other places of shipment, with the products they send out and receive, will still further enlarge the children's idea of a town as a trade centre. If the town in which the children live is the capital of the province or the chief town of the county or municipality it becomes, at the same time, a centre of government and trade. The children in the rural districts and villages all over the country are familiar with the chief town of the county or municipality where people congregate for various causes.

In such places it would be advisable to give a few lessons to the study of the town.

If the town lies upon a navigable river or canal, some attention should be given to the trade by water, explaining boats and their cargoes and modes of propulsion. It is quite evident that in discussing local commerce in concrete forms, children may get a clear notion which will be a means of quick interpretation of many later geographical topics.

The geography material treated in home geography falls into a few large, distinct topics, and these again into smaller units, each capable of a connected treatment. In every topic which is handled with children there should be a simple sequence of connected ideas. This is true even of the excursions which are made to the open country, to the woods, to a shop or factory. The purpose of the excursion, and of the school lessons which follow it, centres in a single idea. It may be to trace the course of a brook, and to consider its various uses, for water supply, for drainage, for beauty of scenery, etc. A shoe factory reveals the process by which raw material is worked up into shoes and prepared for the market. A fruit store is a centre into which fruits are brought from all parts of the world and sold out to consumers. Most of these topics contain each a natural unit of thought based upon the actual surroundings and conditions of life. The dairyman, for example, has the process of butter-making, and is dependent upon the farms for the supply of milk and upon shippers and consumers for the disposal of his product. Everything is causally conditioned, and the child may see the reasons and trace this line of causality through an industry. This means, of course, that

teacher must have first solved the riddle, that is, the problem which each tradesman is compelled to work out. This demands of the teacher a power of accurate observation and an ability to trace causes and effects; in short, a clear and comprehensive analysis beforehand of the materials. Children may also acquire this close connection of thought and the ability to express themselves coherently in longer sequences. The fragmentary and conglomerate character of much geography study is a point of criticism. Children can fully appreciate connected thinking if the right sequences are presented, with familiar objects as a basis of thought. For example, to trace the coal from the chambers in the mine to the factory or schoolhouse where it is used, is entirely within the grasp of children; or to follow the pine tree in the forests of Ontario or New Brunswick to its use as lumber in a house in Quebec; or bananas from a plantation in Jamaica to a grocery in Winnipeg. Moreover, these are the same sequences that real life, in its necessary adaptations to surrounding conditions, imposes. Such a sequence, clearly traced out and understood, is a sure basis of a connected, independent narrative on the part of the pupil. Trace these topics out also on the map. Along the line of these important sequences most of the children's own observations may be ranged, and thus they may be saved from that loose, incoherent collection of facts and experiences in which oral discussions are apt to run to waste.

As already stated, the topics treated in "Our Home" are large units of instruction, each worked out in a connected series of points. At the same time, by means of pictures and illustrations, these topics are rendered concrete and interesting. But the text, the pictures, and the detailed

descriptions are designed to work out together this series of ideas in a single unit of thought. The review questions also and suggestions for teachers on pages 140 to 152 are intended to collect other concrete knowledge gained by the children around the central topics of instruction. The excursions into the home neighborhood of which we have spoken will serve to concentrate a still greater amount of experience and observation upon the central topics treated in the book. It may be easily seen, for example, that the excursions to shops, factories, and stores, together with the study of the home town as the centre of trade, contribute directly to the great topics of industry and commerce treated in "Our Home." In like manner the topic of government, necessarily somewhat abstract in its book treatment, will receive from the topics of local town government and municipal government many concrete details which will give to it added significance.

The large topics on surface features, as soil, hills, valley, rivers, ponds and lakes, in "Our Home," will receive particular illustration in many ways from the excursion into the home neighborhood. The observation of local weather conditions, winds, storms, temperature and seasonal changes, will add substance and interest to the topics which are treated in Chapter VIII. of "Our Home," under the subject of air. We may observe also that the excursion for working out the local maps will serve admirably as an introduction to the book chapter on maps. In these various ways we are able to observe the numerous and important applications of home-bred knowledge to the process of acquiring primary geographical concepts. In some cases it is well to begin the study of a topic with the treatment in the book, and to insert the local excursion

and discussions where they are most needed. In other cases the local observations will be a good introduction to the whole topic.

In some respects the incorporation of this local home knowledge into geographical topics is more important even than the logical sequence in the treatment of topics. But it really strengthens the idea of logical order and connection. It is impossible to secure such a close sequence of ideas in topics unless some large, important concept is under consideration, and unless one enters somewhat fully into the concrete details of its treatment. The concept is necessarily comprehensive and abstract in character. The great difficulty in the treatment of all topics in the first year or two of geographical study lies in basing it upon concrete experience, and thus filling up these general notions with meaning. A mere outline of leading points in a subject is almost wholly lacking in interest, and cannot reveal to a child the causal and necessary relations, any more than the mere names of a series of battles indicates the strategic skill of a general. The details with which the topic is filled give not only interesting pictures, special objects, and lively experiences for the children to incorporate into their thought (such as a good excursion or a good magazine article always furnishes), but these detailed facts are the real links of the causal connection in important sequences. If a child has traced the wheat from the field to the granary, then through the process of cleaning to the grain elevator, where he sees it loaded into cars and shipped to Fort William, where again it is transferred to lake vessels and shipped eastward, he has a complete series of causally connected facts. These facts will aid him greatly in interpreting the work of the farmer and

the grain merchant in all parts of the great wheat belt. They will also help him to understand better the movement of other products which are sent to the great centres of trade, like Minneapolis, Chicago, New York, Montreal, Toronto, Winnipeg, Halifax, etc. Such a close causal sequence is found in nearly every topic which is treated in home geography, and this same causal sequence becomes typical in later study of the largest geographical notions or units.

The lessons in the book, being for the most part more general, comprehensive statements, are better adapted to close up and round out the treatment of topics than to serve as a first introduction to them. They are an excellent basis for the teacher's study, showing what topics to treat and how to centre his thought on the main idea and to get a proper sequence of topics and materials. It will take thoughtfulness and skill to bring the work of the local excursions into close relation to the text-book study. At this point the teacher has to deal with several bodies of knowledge: (1) the experience which every child picks up incidentally about home; (2) the local knowledge gained through local excursions; (3) the pictures, descriptions, and explanatory matter contained in the text-book; (4) the general geographical notions which these different materials are designed to illuminate. It may seem to be a heavy task for the teacher to organize all this material fitly, but it is by no means so difficult as to try to teach geography without such concrete matter. For example, the chapter on ponds and lakes contains general descriptions illustrated by pictures and drawings. In addition to this it is useful to call up the particular experiences of children with dams, ponds and lakes, to review any excursions wh

bear upon these topics, and even to explain by means of the lakes of one's own neighborhood the points mentioned in the text. The Province of Ontario, for example, has many illustrations like Simcoe, Erie, Nipissing, Georgian Bay and the Muskoka Lakes, which show the inlet and outlet of rivers, also the irregular shore lines, the harbors and cities, and the various uses of lakes for commerce, fishing, drinking water, ice, summer resorts, scenery, and the like.

The teacher should not forget to make use of the larger opportunities for observation and travel which he has had. His reading also will supply him with many definite geographical details, and he should strive in every way to use this knowledge to give a lively interest to geographical study. A teacher with a good imagination may from his reading and studies build up geographical pictures, which will be at once vivid and impressive. In connection with the discussion of harbors on page 63 of "Our Home," it may be well to present clearly, by means of a board map, pictures, and verbal description, such places as the harbor of Halifax, Montreal, Port Arthur, Vancouver, or some other sea port or lake port, familiar by name to the children.

There is still another means by which such topics may be enriched with concrete material, and the work be made very interesting. The large topics treated in the book furnish an excellent basis for the collection of pictures and for grouping them about significant ideas. Even during the first two years of study this may be done to a considerable extent. From papers, magazines, guide books, and advertisements, from railway announcements and pictures, it is possible for teacher and children to work

together in gathering and sorting material suitable for illustrating the lesson. Old geographies furnish excellent material of this sort. Even after being sorted and arranged, these pictures need to be studied and interpreted, as children are largely lacking in the experience necessary to interpret even good pictures. These need also to be brought into direct relation to the topic studied in the books. Such pictures are well worth preserving in scrap-books for use in future classes.

In addition to his other accomplishments, it is well for the teacher to be able to use the sand map, and to mould the desired forms quickly, while talking and explaining, and perhaps questioning the children. It should be noted that children take much pleasure in constructing local and other maps in sand, and they should be encouraged in work of this kind. Sometimes the corner of the school-room may be used for this purpose; sometimes the ground on the school yard furnishes, in good weather, the best conditions for map-making.

Before leaving each important topic, or division of a topic, the pupil should be able to give a connected and relatively complete description of the subject handled basing it partly upon the book lesson and partly upon knowledge gained from other sources. Until this is done the teacher cannot be sure that the children have clear notions and a real mastery of the subject. Such recitals by the children should not be interrupted by frequent questions and interpolations by the teacher. Full, clear, and self-reliant expression is the aim to be reached. Frequent questions either interrupt the children or help them with suggestions, to such an extent that they do not gain the power of clear and connected narrative. This ability

however, a result that every good teacher will work for until it is attained. The teacher should be kind and considerate to the children in every way, but this should not interfere with high aims and strong demands for self-reliant effort.

As soon as the children are old enough to write upon topics treated in the book, it is a good trial of their power and of the teacher's success to give them a written test. Too much must not be expected at first, as, in the junior grades, children are not very proficient in the written expression of their thought; but it is very useful both to teacher and pupils to apply the written test to the previous oral work and discussion.

The text-book itself forms a good basis for strong work during the study period. It is the practice of our schools generally to supply the children with a good deal of study work at their desks in preparation for their class recitation, and the teacher must provide for this. But it should be remembered that children should be able to read and to understand the text with comparative ease before it is put into their hands for seat study. The whole discussion heretofore has revealed the variety of concrete experiences which should stand at the beginning of any topic. In the assignment of the lesson for seat study it is well to anticipate any unusual difficulties, by calling up the previous experience of the children. In this preliminary work children must first learn how to think geography before they can rightly interpret the descriptions and statements of the book.

The study of the world in general calls for a very brief treatment for children of this age. Children are naturally interested in thinking of the earth as a great ball and they

are capable of understanding a few of the simpler notions of mathematical geography. The topics on local geography concerning the seasons, observations of the sun, moon, and stars, and the changes of day and night are an indispensable basis for this study of the earth as a whole. The notion of the earth as a globe should be obtained from as large-sized globes as can be secured. In these lessons the appeal to the senses and the imagination of the children, by means of globes of different sizes to represent the earth, the moon and the sun, is very helpful. A yarn ball pierced with a knitting needle, a marble, a football, pasteboard globes, and the best school globes are very useful. The teacher should handle these materials very freely to show the relative position and motion of the earth. At the same time the blackboard may be used for the graphic representation of the earth in its position and course. It is well also for the children to use the globes and to make the drawings so that they may express their understanding of the subject. Long verbal niceties are to be avoided. The whole subject demands only a brief treatment, and its more difficult points should be left for later years.

In fixing the names and location of the different parts of the earth upon the globe, such as zones, continents, oceans, and lesser divisions, the quickest way is by oral drills with the whole class. Let the teacher use the point and secure lively, spirited work. In a very few lessons the essential things may be learned. This is no suitable time for memorizing a multitude of geographical names and places about which the children know nothing. At the same time this study of the world in general and the fixing of the great geographical features upon the globe will give an element of clearness to all later geographical study.

The general movement is from the home outward toward the remoter parts of the earth, but children must have a general grasp of the earth as a whole at first, so that they will not be moving out constantly into a dark or vague unknown.

The study of the world in general should be brought into close relation to the previous experiences of children and especially to the home geography. In conversation they have heard more or less of other countries and of the earth a sa big ball. They see the Chinese, the Germans, the Italians, the Icelanders and other races on the street, and they can locate on the globe the countries from which these people come and the oceans they must cross in order to reach Canada. Many of the common articles of food on our tables, and our clothing or ornaments come from foreign countries. Let them be located with reference to these facts; *e.g.*, tea, coffee, sugar, spices, ostrich feathers, ivory, mahogany wood, statuary, porcelain, tropical fruits, house plants like begonias and palms, cocoanuts, parrots, silks, rugs, and even curiosities they may have seen, or wild animals from different parts of the world. Even the stories the children have read, either at home or at school, may be used to help in locating far distant countries.

The study of the grocery and fruit store, the china store, and the breakfast table may also lead us to the most distant parts of the earth.

OUR EARTH AS A WHOLE

I.—The value of the full study of Canada and of the remainder of North America.

Following close upon the heels of home geography comes the study of Canada and of the remainder of North America. There are good reasons for an enlarged study of our own country early in the geographical course. At the same time the relations between Canada and the United States are so close, that it is impossible sometimes to separate the study of the one from the other. In studying the physical features of Canada, for instance, it is necessary to follow the mountains, the watersheds, the rivers into the United States, and to compare the conditions, which as a consequence, exist in both countries. The Great Lakes cannot be studied merely from the Canadian side; the true geographical perspective would be lost were this attempted. As far as possible, however, the two countries should be kept separate, and attention centered at this stage of the course upon Canada. A much fuller treatment of the chief topics in our own country, preceding any detailed study of foreign countries, is rapidly becoming the order of the day. There are several good reasons why these home studies should precede all others in geography. In the first place, they are more directly connected with the topics already studied, and in many respects they are a direct outcome and continuation of these topics. In the second place, they are, by hearsay and by frequent mention, better known to the children than any other geographical topics. The

children of Ontario, even before beginning geographical study, have heard many times about the St. Lawrence, the Muskoka Lakes, New Ontario, the Falls of Niagara, the Ottawa River, and they are much more interested in these than in foreign places, the names of which they have not even heard. In the third place, the leading topics of study in Canada, as the rivers, cities, mountains, lakes, products, industries, etc., illustrate or explain almost exactly many of the same topics which will be studied later in other countries. It seems strange that we should think of studying the mountains, the rivers, the agriculture, the mining, and the manufacturing of other countries, before giving any clear description and explanation of kindred things near by, and known to us as important in our own land. In the fourth place, a much greater concreteness and fulness of detail will be possible in dealing with topics descriptive of our own country than will be either desirable or necessary in the treatment of foreign lands. It is important that such topics as are taken up in the early years should be full of strong, interesting subject-matter. This may be secured easily in topics such as, the Saskatchewan River, the Rocky Mountains, the Great Lakes, and the people and industries of our own country.

It is, of course, evident that such a detailed study of Canada will require a great deal of minute and accurate knowledge upon the part of the teacher. No text-book intended for the use of pupils can contain anything like the amount of information, which must necessarily be given to the children during the course of the geography lesson. All that the text-book can do is to summarize the leading facts, in order that the children may have pegs, as it were, upon which to hang the facts they are constantly

picking up, both from their own investigations and from the teacher. The importance of studying Canada thoroughly before proceeding to the study of the remainder of North America, and to the other continents, has been recognized in "Our Earth as a Whole." Seventy-five pages are devoted to Canada and Newfoundland, twenty-three to the United States, seven to Mexico and the West Indies, while seventy-three pages are given to the remainder of the world. There can be no doubt that the plan followed is both valuable and educative.

Fifth, the history stories connected with Canada, which are generally treated in the same grades as the geography, make it especially advantageous to bring the geography and history into closest relation. The stories of Cartier, Champlain, LaSalle, Hennepin, Henry and McKenzie cannot be understood apart from the geography of Canada. On the other hand the history stories lend a peculiar attractiveness to many localities in our Canadian geography. Nearly every important part of Canada, its rivers, mountains, plains and coast lines, is touched in an interesting way by these stories of early adventures and discoveries. The French explorers along the Great Lakes, Radisson and d'Iberville on Hudson Bay, McKenzie descending the river which bears his name, Thompson and Fraser crossing the Rocky Mountains, are only a few of the examples which might be given.

Sixth, Canada is extremely rich in the variety, attractiveness and importance of its geographical features. The St. Lawrence is remarkable for its system of Great Lakes and for Niagara Falls. The mountains of Canada are of every variety, abounding in impressive scenery and in mineral resources, and in wealth of forests. The variety

of climate is of almost every type from the lovely mildness of British Columbia, to the intense winter cold of Labrador or the Klondike. The agricultural and mineral resources of the country and the occupations of the people, based upon these, illustrate almost all the chief phases of human activity on a grand scale. Still more, if Canada be considered as part of North America, and the remainder of the continent be taken into account, the child who has made a somewhat minute study of the country, will have acquired a substantial and adequate basis for all his future geographical information, whether gained in school or in life.

Seventh, from the pedagogical standpoint, there are two significant reasons why this clear and full knowledge of our own country should be gained early in the course. First, it constitutes that body of apperceptive ideas by the use of which children may the more easily and quickly master and appropriate the geography of other countries. It is the capital with which a child quickly develops the geographical resources of distant lands. This is an idea whose growing importance is being more and more understood by teachers. Secondly, the geographical objects with which the children are made familiar in Canada become the commonly used and fixed standards upon which all other foreign objects are measured and their size or value determined. Just as a child who has clear notions of what is meant by a foot, a yard, a gallon, a barrel, a pound, a ton, a square mile, a hundred miles, a dollar, a thousand dollars, a peck, a bushel, etc., may easily measure all objects upon these standards; so a child who has acquired a definite knowledge of the St. John River, of Mount Stephen, of Lake Nipissing, of Halifax, of Banff

Springs, of a gold mine, of the cod fisheries, of a cattle ranch, of Niagara Falls, of Toronto as a trade centre, etc., may constantly fall back upon these familiar standards and by comparison may determine the size, quality or value of new objects in countries other than his own.

In studying the geography of our country, the teacher should not neglect to bring clearly before the children the relation in which Canada stands to Great Britain, and to the British Empire as a whole. This will necessitate special attention being paid to the Mother Country, and to the various portions of the Empire. The importance of this study cannot be overestimated, both from the patriotic and from the commercial standpoint. Every Canadian child should have an intelligent knowledge of the great Empire of which his country forms a part. He should be acquainted with the commercial needs of the countries which make up the Empire, and should know how Canada can benefit these and be benefited in return. For instance, what does South Africa lack that Canada can supply? What is the shortest and best route to South Africa from Canada? What can Canada import from South Africa for her own use? These and numberless other questions will crowd upon the teacher, who fully realizes the importance of a study of this kind. No more effective work in empire-building can be done, than in training the children of Canada to think intelligently upon these great problems.

II.—It is a striking feature of "Our Earth as a Whole" that it picks out a few important topics for elaborate treatment, instead of giving a brief and superficial survey of many topics. This concentration of study upon a few important units leads to a fulness and thoroughness of instruction which makes the study in all respects more

valuable. There is such an endless variety of topics in geography that some sort of selection is imperative. In making this selection the teacher must weigh the relative worth of facts and pick out those which have a commanding influence; for example, the St. Lawrence River, lumbering in British Columbia, coal and iron in Nova Scotia, and the Welland Canal in Ontario. The Great Lakes have a dominating influence upon the climate and commerce of the richest part of Central North America. Such a large topic as this, studied in its important influence and relations, is, in reality, a key which unlocks one great door of knowledge.

Such a topic also admits of a logical sequence and organization of facts which calls for good thought work both from teacher and from pupils. It is in marked contrast to a fragmentary and superficial accumulation of geographical facts without any strong unifying thread. This subject, the Great Lakes, makes it necessary for the teacher to think out a connected series of important topics dealing with the physical features, the climatic conditions, the navigable waters in commerce, the falls, rapids, and canals, the series of lake and river ports with reason for their location, the products shipped back and forth over this trade route, and the sources from which they are drawn. This exercise in logical thinking, in the organization of complex material into a connected series, not only teaches the main geographical facts, but also explains their meaning and relative importance.

III.—In many cases the central thread which binds together this large body of varied material is the idea of cause and effect. One topic leads of necessity into another, and so on to a third and fourth, through a whole series.

Such a causal idea brings together, into one central topic, a body of closely connected facts drawn from several sources,—physical, commercial, historical, and industrial. Nearly every important geographical unit, when properly organized, is just such a combination of diverse elements held together by strong causal relations. It is wholly artificial and unnatural to isolate these various parts of a complex subject from one another, and to treat them separately. Isolation, for example, of the physical facts of the St. Lawrence system from the commercial, industrial, and political geography, gives the facts without cause or relation, and out of their proper setting and meaning.

The virtue of the causal idea lies in the child perceiving that the physical conditions produced, for example, by the Great Lakes and the St. Lawrence River, together with the other physical facts of this region, have directly influenced men in their industries, such as lumbering, mining, fishing, commerce, etc., also in the location of their cities, and in determining the trade routes which are so very important to all the inhabitants of this region. It will not do, therefore, to treat the cities and trade routes as distinct topics, and the lakes, forests, and surface features likewise as isolated topics, without any reference to their intimate and organic interdependence.

The political divisions into provinces or states and nations form larger complex units of study. In the treatment of geography these units have played an important part. They have been so much used in maps and descriptions of countries that they have become the most convenient means for designating certain areas. When we speak of Quebec or Manitoba, of Texas or Maine, of Spain or Italy, we designate certain political and territorial

units more clearly than in any other way. The universal usage of books and of educated people has fixed these divisions in our language and in our thought, but we may ask ourselves what are the reasons for their continued use as the titles of important geographical topics.

First, as political units they are important, and when synonymous with nationality they have characteristic marks, which give them importance and distinguish them from all others. France, Spain, Italy, and England are not only separate political units, but there is in each also a unity of life in commerce, language, custom, history, and literature; and, to a large extent, there is even a distinct physiography. Paris, as the capital of France, is the centre of the national life, not only in government, but also in commerce, manufacturing, education, literature, and fashion. In a similar way London, Berlin, Constantinople and Moscow, are great centres of national life. In short, a nation is a large complex unit, and the series of nationalities, such as England, Canada, the United States, Russia, China, etc., must always constitute a most important series of geographical topics.

It is necessary, therefore, to treat these nationalities or political units, in many cases, as separate topics, since they form convenient centres around which to collect and group a variety of lesser topics.

Berlin, for instance, the political capital of Germany, has become also the commercial and railroad centre of the empire. The military system of Germany, so significant in the politics of Europe, is best explained as centring in Berlin. Education has here its administrative head, and the great University of Berlin is the nucleus of the

whole school system. The great art schools, also, are located at the capital, where are preserved, in museums and galleries, the art treasures belonging to the nation.

This prominence of political units is noticeable at the beginning, at the end, and throughout the course of geographical study. In the earliest survey of North America as a whole, attention was called to the three chief political divisions, Canada, the United States, and Mexico; and a similar plan is followed in the study of Europe and the other continents. Again, in completing the study of any country, a multitude of minor topics is combined into one large complex unit like France or Turkey. The reason for this is the fact that these geographical topics are, to a large extent, social units, rather than physical or scientific units. A nationality like England or Switzerland grasps into one thought a great variety of closely related elements, or rather it is a cross-section of all the important elements. Geography is a complex study, not a series of scientific units drawn from physiography, meteorology, geology, astronomy, and biology. There has been a strong tendency to treat geography from the standpoint of these distinct sciences; but the important geographical units are those which combine all of these, more or less, into a single topic of causally connected parts.

The physiographic topics, like physical structure, geological strata and changes, river action, etc., are in much danger of standing out in isolation from those industrial, political, and social phenomena which form an important constituent of most geographical topics. It is claimed, of course, that physiography explains so many things broadly on the basis of cause and effect, that its topics must be

treated first and in full. But it is a pedagogical error to explain so many things in a general, more or less abstract form, before the children have come in contact with the facts which need explanation. The adult and scientific mind sees in these great physical causes the explanation of a multitude of minor facts, and is greatly interested in such a broad survey of causal influences. But the child has no such interest because he is incapable of such broad generalizations and inferences. In short, it is the imposition of the adult standpoint upon the child.

It seems advisable to begin the study of any important region or country by a brief survey of physical and climatic conditions. But the important thing, after all, is to bring these physical causes into close relation to the special topics at the time when they are being treated in full. For example, when we are discussing the fruit-raising of Ontario or British Columbia, we should enter definitely and fully into the physical surroundings and climatic conditions favorable to fruit-growing. The effort to explain all these things by anticipation, when dealing with the physiographic features of North America, would be a mistake. Likewise in explaining the arid regions of the Western States, it should be done chiefly at the time when irrigation is under full treatment, so that the cause and effect upon human life and industry may be immediately felt.

Even the smaller political units expressed by the names of provinces or states are of much value, because they sometimes express distinct physical units, as in the case of British Columbia and Maine; or when formed into groups like the Maritime Provinces or the New England States, they designate distinct physical divisions of country.

It seems, therefore, that there are important reasons why the political divisions into provinces or states and countries should continue to constitute an important series of geographical topics. We may, indeed, drop out a large part of the old minutiae of political map studies, such as the names and location of the capitals of all the provinces, the exact boundaries of each separate province, and the drawing of the special maps of each. The time thus saved may be better devoted to topics which extend through several provinces, or to those topics which are characteristically important in any one province or group.

It is not meant by this special attention to provincial or national geography that we should make a miscellaneous catalogue of products for each province or nation, to be memorized by the children. For example, in connection with Ontario, it is of very little value to learn merely that it produces wheat, grapes, hops, salt, petroleum, lumber, apples, peaches, dairy products, farm machinery, and a multitude of other manufactured articles. In planning the study of any large political unit like France, we should consider, not only the physiographic and climatic conditions, but we should select for somewhat elaborate description a few prominent topics which bring out, in a striking way, the pronounced characteristics of the people and the country. Paris as a centre of art, fashion, and amusement, the production of wine, the manufacture of silk, give us that small group of topics whose full description will bring out the most important points in city and in country life. The architecture, style, and gaiety of the French capital, and on the other hand, the vineyards, peasant life, and sunny fields of the open country, are pictured. In Germany a quite different series

of characteristic topics would be selected. The army and military system, the universities, the opera, the popular concerts, the beer-gardens, the Rhine River, the beet-sugar industry, and the great iron manufactures on the lower Rhine may serve as central topics. A few such characteristic topics in each country, fully described, give a more distinct notion of the nation as a whole than a catalogue of products, industries, etc., such as has been customary in the ordinary text-books on geography.

In the real world, outside of school books, we find every great geographical topic springing out of complex conditions. To be understood, it must be studied in its causes and relations to man and to nature. The effort to unravel the causal idea hidden in these facts brings out the central influences that are at work in physical geography, in commerce, and in history. The outcome, as already explained, is a causal series of mutually dependent facts.

IV.—In connection with the causal idea, it is easy to set up problems for solution which give us the best forms of mental discipline. In any important topic, when certain facts have been presented, interesting questions or problems may be introduced which will require the pupils to combine and interpret facts. This is especially true of all the great industries, such as mining, manufacturing, and agriculture. We have as distinctly marked problems in geographical study as in arithmetic. For example: Explain fully why Sydney is an important centre for the iron industries. Again: In shipping grain from Port Arthur to Europe, what is the best way of getting around Niagara Falls? What is the best railway route between New York and San Francisco, and why? How is it possible to get irrigating water from rivers up to the level of dry lands

which lie considerably above the surface of the rivers? Why has the Colorado River deeper and longer cañons than any other great river in North America? How may small rivers be deepened and made navigable for steamboats and canal-boats? Geography, in all kinds of topics, bristles with such interesting questions. The teacher may state these problems with sufficient explanation of the conditions involved, so that the children may think out important results and conclusions. To answer these and similar questions, the student must gather the facts together and organize them; he must compare and balance different sets of facts, and must draw important inferences. The student who gets into the habit of working out such problems is acquiring a sure independence and self-reliance in thinking. Moreover, the data for his thinking consists of the undisputed facts, the realities of life, as shown in industrial, commercial, and political affairs. There is a very broad distinction in geographical study between memorizing facts and locations on the one side, and the working out of problems on the basis of cause and effect on the other. Not only is this a source of stronger interest and better thinking, but it binds the ideas together more firmly in the memory, and makes such knowledge more serviceable in interpreting the world about us.

A superficial observation of children might suggest that they are chiefly interested in facts, and not in deeper-lying causes; but in the higher grades, if not sooner, they are naturally inquisitive about the reason and cause of things. Unless their training has been very poor, they like to probe into these questions, and for the skilful teacher, here lies the spur to a true interest and to a strong effort on

their part. In the lumber business, it is a source of interest to see how the logs are gotten out of the woods and brought to the river banks in winter, how the skidding roads are skilfully laid out for this purpose, why the rivers, in springtime, are specially useful, where the saw-mills are located and why, and how the lumber is distributed to the prairie regions. At every step in the movement we meet the same problems which the lumberman is compelled to meet and solve. This kind of work commands the unbounded confidence of children, because it is so real and tangible, so true to the conditions of life.

There are many varieties of geographical topics admitting of this problem-solving study. In the raising of beet roots for sugar we pass from the farm to the factory and refinery, thence to commerce and distribution over great traffic routes. The same with all other staple agricultural products in various parts of the world. The study of iron mines and the production of raw ore, the shipment of ore to the centres of iron manufacture, its treatment in blast furnaces, mills, and factories of all sorts, and the distribution of iron machines and products by commerce,—all these likewise show the operation of causes, and the forethought and ingenuity of men in meeting and solving difficult problems. The coal-mines, silver-mines, and other metal-producing mines furnish similar problems.

The full study of any important topic in geography penetrates into the deeper and more important connections, not only of geographical facts, but of many facts belonging to other studies which are wrapped up with these. For example, in the discussion of the iron industries, the sources from which iron and coal and lime are obtained

touch on geology and mineralogy. The process of smelting, a very interesting study, deals with chemistry and the effect of heat. Likewise the processes of producing steel and wrought iron. Again, the manufacture of iron goods, such as wire, steam-engines, agricultural implements, bridges, etc., deals with interesting inventions touching on history, physics, and chemistry, and various phases of geography. This naturally brings up the great problem of correlation or interconnection of studies. The only point which we wish to emphasize is that of the presence of strong causal relations, which bind together the different parts of an important topic, and which give opportunity for setting up problems in school work which are in fact identical with the problems of business men, manufacturers, shippers, and capitalists in the world of industry and trade.

In any proper treatment of such large geographical topics, it is impossible to avoid this apparent mixing up of studies, but the whole difficulty is solved by the teacher who knows how to work out a connected series of points necessary to the logical development of a controlling idea or process. When such a controlling idea is present in the mind of a teacher, all these complex materials are brought easily into coherency and unity.

V.—Of equal importance with the idea of causal sequence, and with the opportunity for problem-setting in following causal relations, is the idea of types. These important units of study which we have described as valuable centres around which to collect and organize facts, have a still greater value when looked at in their typical or representative character. If children have obtained a clear understanding of the glacial ice sheet in North America,

and of its effects on soils, rivers, and lakes, it is an easy matter, on the basis of this previous study, to explain the similar glacial period in Europe, where like causes have produced like results, and so in other parts of the world. Again, if the children have studied the great cañon of the Colorado River and the causes of this most striking example of the erosive power of water, tracing back the causes to the location of mountain chains, plateaus, and slopes, to winds and rains on the mountains, and to the dry climatic conditions of the great western plateau; in short, if they have thoroughly understood the causes that have produced the Colorado cañon, it will be very easy and interesting for them to explain the trough of the upper Mississippi, the gorges of the Rhine and the Danube, the Kongo cañons on the western rim of Africa, and the great gorges of the Brahmaputra and other cañon rivers of the Himalaya.

Each geographical type is in its first treatment very individual and concrete. And this concreteness lends interest and a strong sense of realism to the study. For example, the study of Banff as a mountain resort, is full of picturesque and concrete realities. They are such as the traveller experiences on his journeys. The treatment of geographical topics is oftentimes so general and comprehensive that these interesting details are left out, and is therefore weak and powerless to arouse the attention of children.

But wrapped up in these concrete facts are representative or typical ideas which are brought out by the comparison of similar objects. A type-subject is the basis for a series of comparisons, which leads oftentimes to a sweeping general notion, which gives comprehensiveness and

unity to a large body of more or less scattered facts. It seems strange how little attention has been paid heretofore to the worth of a geographical type. Once understood, it is a means of interpreting quickly scores of similar things elsewhere. We have been so occupied with memorizing bare facts in geography as to forget that the chief purpose and value lies, not in the memorizing, but in the understanding of the facts. The intelligence of children is increased by their insight and their power to interpret the meaning of things, rather than by the number of names they have memorized. If a child understands how an irrigating ditch is constructed along one river valley to enrich arid lands, he possesses thereby an idea which will speedily interpret to him the means by which agriculture is made possible in hundreds of places or along hundreds of streams in the Western States and in the southern portion of Alberta. The same is true in India, in China, in Mexico and in South America, and in many other arid regions on the borders of the great Saharas of the world. Such a type which possesses within itself the power of interpreting a multitude of things in many lands is educationally of the highest value. By comparison of similar rivers or similar cities or mountains, the type-idea common to them all springs into view. If we are careful to select the best types, and, after treating each one fully, to make sufficient comparisons to bring out the variations of the type in different countries, we shall acquire a speedy insight into the main lines of geographical knowledge. The original type, worked out in more complete detail than the others, becomes the standard of measurement for a host of similar things in later geographical study. The enlargement, extension, and variation of a typical idea by means of

comparisons will give the children a good opportunity for associating similar groups of knowledge; that is, for organizing that which they already know.

To supplement and complete the work with types we need comprehensive surveys, reviews, and drills. Otherwise the types stand isolated and unrelated to one another, and large bodies of important facts seem to be overlooked. Every important type study, before it reaches completion, should bring within the circle of its discussion the whole body of facts which is typified by it. For example, in treating the sugar beet industry in Canada or in the United States or in Germany, we should discuss the agricultural methods employed on a sugar beet farm, the processes of extracting the sugar in the factories, the methods of refining, the shipment of the product to its consumers even in foreign lands, the location and extent of beet sugar production in Germany, France and other European countries, in the United States and in Canada. In Cuba and the Hawaiian Islands, and in the Southern States, the cane sugar production should be compared with that of beet sugar, with respect to its relative importance and methods. The production of maple sugar in the hardwood forests of Ontario and Quebec should be compared also with the other forms of sugar production. In this way the whole broad field of sugar production in all parts of the world, in its relations to agriculture, manufacturing, and commercial routes, may be worked out into a large, connected complex of facts.

VI.—To secure this more complete mastery and connection of facts in geography, there is great value in oral drills, both for the class as a whole, and for individuals. Large wall maps are of special use. With such maps, and a

pointer in his hand, the teacher may give rapid oral drills upon cities, rivers, countries, peninsulas and bays, mountains and political divisions, in fact, upon all the leading points in geography. Many of these facts range themselves in great series along traffic routes, river courses, or coast lines, or they may be traced along parallel lines of latitude or along great mountain chains. It is an easy matter to arouse strong enthusiasm and a vigorous class spirit in these oral drills.

When new and difficult geographical names are pronounced, first by the teacher, and then in concert by the class and singly by pupils, they are very quickly fastened in the memory. Much more may be accomplished in a short time by vigorous drills in the class than by long periods of seat study. Such drills as these may be thrown in at odd moments almost daily, and they give variety and interest to geographical study. Without such drills it is almost certain that many of the commonest names and facts will not be well mastered. The children may not know how to pronounce the new names, and if they learn them at all at their seat study, they are apt to learn them incorrectly. Children will get much detailed knowledge from special type studies, but they will fail to acquire that ready mastery and comprehensive grasp which nothing but drill exercise will be likely to give. These drills will fill in to a large extent, the necessary facts lying between the larger types, and will give that mastery over the facts which alone is of practical benefit.

VII.—In the treatment of the topics worked out in the text-books there are several ways in which the teacher may strengthen and re-enforce the text-book lessons. In the assignment of lessons in the book, it is well for the teacher

to consider carefully how to open up the subject in such a way that the assignment of the lesson itself becomes something of a revelation of interesting problems in connection with the facts dealt with in the book. Merely to assign a number of paragraphs or pages in the text is useless, but if the teacher calls attention to what the pupils have been studying, if he shows how this leads up to the following topics, if he recalls some familiar experience or knowledge of the children, if he shows how the lesson will be helped by a proper study of maps, or by examining certain pictures, or by reading some book of reference, a strong stimulus will be given to the study of the lesson. With many children the victory will be half won. The purpose that underlies all this is not to give excessive help to the children, thus reducing their own self-activity and independent effort, but rather to stimulate to stronger effort, to thoughtful study, to an independent use of books and materials. A great deal will depend upon the teacher knowing how to assign a lesson properly.

It is generally admitted that there are several important ways by which the knowledge contained in the text-books may be extended in class discussion. This may be done by the presentation of additional facts by the teacher, by the use of geographical readers, guide-books, and books of travel by the children, and by collecting illustrative pictures, maps, and magazine articles from various sources. Many successful teachers of geography use all these methods of awakening the children to thoughtfulness and independent use of sources. It might seem that the text-books are so full of material on important topics that very little needs to be added, and certain it is that the text-book lessons should be the nuclei around which

this additional material is clustered, and to which it is made contributory. But there is one inevitable deficiency in text-book work which the teacher alone can make good. This deficiency lies in the meagreness of the concrete and illustrative details of each subject. If children wish to know how a canal lock works, how iron is smelted in a blast furnace, how the water-power of a river is applied to a mill-wheel, how an irrigating ditch is constructed, how gold is gotten out of a mine, and scores of other similar problems, they will not find the explanation in the text-books. Yet these may be the most important parts of the lesson. Nor can we throw the blame for this defect upon the text-books. It would be impossible for text-books to contain such material. It lies with the teacher and the children to work these things out in the classroom on the basis of the text-book work. This implies, of course, that the teacher, as well as the children, must have some time for the reading of geographical readers and other reference books.

Among other things the teacher must possess skill in the clear and graphic presentation of these additional facts and illustrations. Simplicity and clearness of statement stand first. Next in importance, is the constant use of the blackboard for making diagrams and plans of cities, for drawing canals, machines, and tools, for showing the courses of winds and ocean currents, for exhibiting the processes in the manufacturing industries, for the illustration by blocks and squares of the comparative statistics of products, etc. These things are useful in almost every topic treated in geography. If the teacher has learned how to use them freely and easily, the children also will fall quickly into the same modes of expressing ideas, and

will develop a similar power. Let the teacher encourage them and require work of this kind from them.

This kind of skill and power on the teacher's part may be traced back to definite causes as follows :

(1) The close observation of many common things in his own neighborhood, such as the various modes of cultivating plants, the treatment of stock, the devices and processes and machinery employed in manufacturing, the construction of buildings, etc., in short the various activities and phenomena in the world of human affairs and in the realm of physical nature about him. There are very few of these things which, if closely viewed and understood, will not be found later of great use in clearing up geographical ideas. No text-book can furnish this kind of knowledge. It must be picked up at first-hand by each person, in blacksmith shops, gardens, factories, foundries, hothouses, quarries, fields, storms, homes, travels, and various kinds of daily experience.

(2) The knowledge of how to appeal to similar experiences gained by the children from their own observations. It is not probable that any teacher will overdo this matter of concrete illustration of geographical topics by appealing to the children's home experiences. The work of home geography, especially by the variety of excursions in the home neighborhood, is designed to supply an abundance of this varied experience. Both teacher and pupils should continue these lines of direct observation throughout the years of the school course.

(3) The ready use of sketching and map-drawing. This power is of great assistance to the teacher in his work. Many topics require local maps drawn to a large scale, such as the harbors of cities, a special river basin or flood plain,

an irrigation stream and canal, the plan of a city or local mining district or lumber camp. It is very important that the teacher should be able to sketch such local maps quickly and neatly. In addition to this, children should learn to sketch the maps of provinces or countries, river basins, mountain systems, and continents quickly and correctly as to general proportions, yet without painful accuracy in small details. In two or three minutes a child should be able to put the map of the St. Lawrence Valley on the blackboard, likewise the map of South America or Africa; but no class of children will ever accomplish this unless the teacher gives the example of ready proficiency.

With as little waste of time as may be, children should learn to draw on the board from memory all sorts of maps, correct in general outline and proportion. A brief examination and discussion in class of the book map, with respect to the general outline and proportions, will help greatly in the first attempt to draw any map. If the teacher will sketch it quickly before the children, they will readily grasp the method of execution. It is not necessary that much time be spent in order to get results approximately correct. Maps should be regarded as a mode of expressing the children's ideas a method to which they resort as freely as to the words of language. There are a great many things in geographical study which may be expressed better by drawings and sketches than by language. These various ways of acquiring skill in presentation of ideas should be steadily cultivated by the teacher. They imply open-minded, progressive intelligence at every step. It is in these things that the inventiveness and originality of the teacher are given full scope.

VIII.—Children should learn to study and to master their lessons for themselves. There are many ways in which they may be thrown upon their own resources and taught to overcome difficulties without necessarily assistance. The lesson assigned in the book should be strictly required of them. The topics presented by the teacher also, during the recitation, should be called for again; and in both of these cases without much questioning. Children should recite their lessons in continuous discourse, in no way slavishly bound to the language of the book, but with free and connected expression. If the subject falls into important topics, the mere mention of a topic should be enough to bring a full statement from the pupil. Teachers oftentimes weaken and destroy the best work of the pupil by asking too many questions and by helping the children with little suggestions. The topics which the children have gathered from reference books, they should be able to discuss thus acquiring independence of thought and language. A teacher should never forget that the final worth and outcome of a lesson is what the children get out of it and are able to express about it. If the children are not held to a rigid account by requiring a full and adequate statement of facts in every lesson, they do not gain power.

Like subject like geography there is danger that the teacher may fall into a habit of much talking and explaining. The subject is interesting and admits of infinite enlargement, and the teacher who is well equipped is very easily tempted to turn the lesson into a lecture. But when he has done his duty by the clear and simple presentation of a topic, he should keep silence while the pupils give proof of their understanding. Nothing

can take the place in good oral lessons of the teacher's own careful and complete statement of the topics. But he should not keep on talking and questioning when the work of the children begins. To test the real effectiveness of his instruction the teacher may give every week or two a written review or test upon a few topics. This is the most searching of all tests of the pupil's mastery of the subject and of the teacher's method. Defects in spelling, in language and in thought which do not appear in oral recitations are made distinct and noticeable.

IX.—In "Our Earth as a Whole" great importance is assigned to Review Exercises, by which the facts are fixed in the mind by repetition. These review questions will be found on pages 214 to 233. But this is only one of the ways which lead to a better mastery and retention of the facts. The various methods of review, by repetition, by written tests, by oral drills, by comparison, and by constant appeal to the child's own experience and previous knowledge, are the various modes by which a child's gradually expanding knowledge may be strengthened, consolidated, organized, and made effective in the interpretation of the world.

X.—There are certain dangers and faults which should be guarded against in geographical studies.

(1) The mere memorizing of places and their locations without a study of causes and reasons.

(2) The memorizing of the words of a book without much thoughtfulness as to the value of the things learned.

(3) The abstract rather than the concrete and illustrative treatment of topics.

(4) The lack of close connection and steady coherency of the facts treated in any topic.

(5) The failure to use maps, to make them concrete and real rather than purely formal and symbolic.

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relating to those far distant. It is assumed that an Ontario child will be more interested in Ontario topics, not so much because they are more interesting than other topics, but because he has heard much more about them, and they have come closer to his experience in many ways. From childhood he has heard of these things, and, knowing something, he will be glad to get more definite information.

It is to be noted also that, while the topics treated in the "Provincial Geographies," will be rich in descriptive details, they will at the same time, furnish excellent types of similar topics the world over. The importance of this study of types has already been discussed. It is not necessary to say more, further than that it is hoped that this kind of study will put an end to the fragmentary and incoherent memorizing of facts in indiscriminate order, which has characterized a great deal of the teaching done in connection with the old fashioned text-books on geography.

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